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PAR 217

FINAL REPORT

Optimization of the Laser

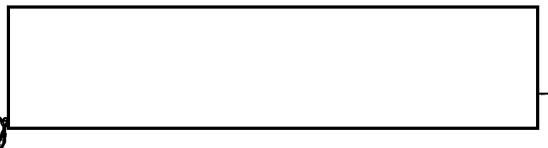
12 October 1965

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TABLE OF CONTENTS

	Page
I SUMMARY	4
II SUBJECT	5
III TASK/PROBLEM	5
IV DISCUSSION	5
A. Theoretical Basis for Harmonic Doubling	6
B. Experiments in Producing Second Harmonic Radiation	7
C. Reexamination of Project Goals	15
D. Beam Uniformity Study	16
E. Literature Search on Visible Light Lasers	16
V CONCLUSIONS	17
VI RECOMMENDATIONS	20
VII APPENDIX I	21

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PAR 217  
12 Oct 65

LIST OF ILLUSTRATIONS

<u>Figure</u>		<u>Page</u>
1	Relative Output of 0.53 Micron Radiation Function of Crystal Alignment to 1.06 Micron Input Beam	9
2	Harmonic Generating Schematic	10
3	KDP Crystal Orientation	12
4	Expanded Beam of 0.53 Micron Radiation	14
5	Solid Material Lasers	18
6	Gas Laser Wavelengths	19

**SECRET**

PAR 217

12 Oct 65

SUMMARY

Visible, coherent radiation of 0.53 micron wavelength (blue-green) was produced in a laboratory setup by harmonic doubling in a KDP crystal from 1.06 micron wavelength input radiation. A one millisecond, 4-watt output radiation pulse ( $4 \times 10^{-3}$  joules) resulted from a 140 joule input pulse from a neodymium doped, borate glass laser, representing  $2.8 \times 10^{-3}$  percent conversion efficiency.

This technique for the generation of visible, coherent radiation is useful only where a short, high peak-power pulse of radiation is required, since the conversion efficiency is proportional to the level of the input radiation power.

The availability of convenient, moderate-price continuous radiating sources of coherent blue or green radiation, comparable to the present He-Ne lasers, appears imminent.

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